

WHAT IS CLAIMED IS:

1. A duplexer comprising:

a package;

a transmission band filter disposed in the package;

a reception band filter disposed in the package and connected in parallel to the transmission band filter and connected to an antenna terminal; and

an electroconductive lid sealing the package with the transmission band filter and the reception band filter disposed therein; wherein

the package is mounted on a mounting substrate having the antenna terminal and is covered with an electroconductive shield mounted on the mounting substrate;

at least one of the transmission band filter and the reception band filter has a ground terminal connected to the lid, the lid being electrically connected to the shield via a connecting member; and

the transmission band filter and the reception band filter have ground terminals electrically connected to a ground terminal of the mounting substrate.

2. A duplexer according to Claim 1, wherein the shield is electrically connected to the ground terminal of the mounting substrate.

3. A duplexer according to Claim 1, further comprising a matching circuit provided between the antenna terminal and at least one of the transmission band filter and the reception band filter.

4. A duplexer according to Claim 1, wherein the ground terminals of the transmission band filter and the reception band filter are connected to the lid.

5. A duplexer according to Claim 1, wherein the transmission band filter and the reception band filter are one of a bulk acoustic wave filter and a surface acoustic wave filter.

6. A duplexer according to Claim 1, wherein the transmission band filter and the reception band filter are a combination of a bulk acoustic wave filter and a surface acoustic wave filter.

7. A duplexer according to Claim 1, wherein the lid and the shield define a ground.

8. A duplexer according to Claim 1, wherein each of the transmission band filter and the reception band filter is electrically connected to the lid and the shield.

9. A duplexer comprising a transmission band filter and a reception band filter connected in parallel to each other and connected to an antenna terminal;

the transmission band filter and the reception band filter being accommodated in separate packages covered with electroconductive lids, respectively;

the packages being mounted on a mounting substrate having the antenna terminal and being covered with an electroconductive shield mounted on the mounting substrate;

at least one of the transmission band filter and the reception band filter having a ground terminal connected to the lid, the lid being electrically connected to the shield via a connecting member; and

the transmission band filter and the reception band filter having ground terminals electrically connected to a ground terminal of the mounting substrate.

10. A duplexer according to Claim 9, wherein the shield is electrically connected to the ground terminal of the mounting substrate.

11. A duplexer according to Claim 9, further comprising a matching circuit provided between the antenna terminal and at least one of the transmission band filter and the reception band filter.

12. A duplexer according to Claim 9, wherein the ground terminals of the transmission band filter and the reception band filter are connected to the lid.

13. A duplexer according to Claim 9, wherein the transmission band filter and the reception band filter are one of a bulk acoustic wave filter and a surface acoustic wave filter.

14. A duplexer according to Claim 9, wherein the transmission band filter and the reception band filter are a combination of a bulk acoustic wave filter and a surface acoustic wave filter.

15. A duplexer according to Claim 9, wherein the lid and the shield define a ground.

16. A duplexer according to Claim 9, wherein each of the transmission band filter and the reception band filter is electrically connected to the lid and the shield.

17. A composite module comprising at least one filter and a mounting portion;
the at least one filter being accommodated in at least one package covered with an electroconductive lid;

the at least one package being mounted on and joined to a mounting substrate via the mounting portion; and

the at least one filter having a ground terminal connected to the lid, the lid being electrically connected to a shield via a connecting member, and the ground terminal of the at least one filter being electrically connected to a ground terminal of the mounting substrate.

18. A composite module according to Claim 17, wherein the at least one filter is a duplexer.